

IN THE CLAIMS:

Please cancel claims 1-24 without prejudice to or disclaimer of the subject matter.

Claims 1-24. (Canceled)

Please add new claims 25-29 as follows:

25. (New) A method for sequencing of a selected region of a target nucleic acid polymer in a sample containing the selected region in substantially natural relative abundance, comprising the steps of:

(a) combining the sample containing the target region in substantially natural relative abundance with first and second primers, a nucleotide triphosphate feedstock mixture, a chain-terminating nucleotide triphosphate and a thermally stable polymerase enzyme which incorporates dideoxynucleotides into an extending nucleic acid polymer at a rate which is no less than 0.4 times the rate of incorporation of deoxynucleotides in an amplification mixture to form a reaction mixture, said first and second primers binding to the sense and antisense strands, respectively, of the target nucleic acid polymer at locations flanking the selected region;

(b) exposing the reaction mixture to a plurality of temperature cycles each of which includes at least a high temperature denaturation phase and a lower temperature extension phase, thereby producing a plurality of terminated fragments; and

(c) evaluating terminated fragments produced during the additional cycles to determine the sequence of the selected region, wherein at least one of the first and second primers is labelled with a fluorescent label.

26. (New) The method of claims 25, wherein the polymerase enzyme is THERMO SEQUENASE™.

27. (New) The method of claim 25, wherein the first and second primers are each labeled with a different fluorescent label.

28. (New) The method of claim 25, wherein the mole ratio of the dideoxynucleotide triphosphate to the corresponding deoxynucleotide triphosphate is from 1:100 to 1:300.

29. (New) The method of claim 25, wherein one of the first and second primers is labeled with a fluorescence label and the other of the first and second primer is unlabelled.